Questionnaire No:

# Industry Short Technical Questionnaire:
## Phase II Cooling Water Intake Structures

**August 1999 (Draft)**

FORM APPROVED ❖ OMB CONTROL NO. XXXX-XXXX ❖ EXPIRATION DATE: XX/XX/XX

**U.S. Environmental Protection Agency (EPA)**
**Office of Wastewater Management**
**Washington, DC**

---

**Notice of Estimated Burden**

EPA estimates that completion of the entire *1999 Industry Short Technical Questionnaire: Phase II Cooling Water Intake Structures* will require an average of **10** hours per plant. This estimate includes time for reading the instructions and reviewing the information necessary to respond to the questionnaire form. Any comments regarding EPA's need for the information, the accuracy of the provided burden estimate, and suggested methods for reducing respondent burden (including the use of automated collection techniques) should be addressed to: ***Director, Regulatory Information Division, Office of Policy, Mail Code 2137, U.S. EPA, 401 M Street, SW, Washington, DC 20460.*** Please include the OMB Control Number, listed in the left-hand margin on this page, with any correspondence.

## Table of Contents

**Page No.**

**This Page Intentionally Left Blank**

# Certification Statement

## Instructions

The individual responsible for directing or supervising the preparation of the enclosed *1998 Industry Short Technical Questionnaire: Phase II Cooling Water Intake Structures* must read and sign the Certification Statement below before returning both documents to the U.S. Environmental Protection Agency. The certifying official must be a responsible corporate official or his or her duly authorized representative. The Certification Statement must be completed and submitted in accordance with the requirements contained in the *Code of Federal Regulations* at 40 *CFR* 122.22.

> *I certify under penalty of law that the attached questionnaire was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, accurate and complete. In those cases where we did not possess the requested information, we have provided best engineering estimates or judgments. We have, to the best of our ability, indicated what we believe to be company confidential business information as defined under 40 CFR Part 2, Subpart B. We understand that we may be required at a later time to justify our claim in detail with respect to each item claimed confidential. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment as explained in Section 308 of the Clean Water Act (33 U.S.C., Section 1318).*

_____ _____

Signature of Certifying Official Date

_____ ( ) _____

Printed Name of Certifying Official Telephone No.

_____

Title of Certifying Official

## Certification Statement

**This Page Intentionally Left Blank**

# General Information and Instructions

## Why This Questionnaire?

The U.S. Environmental Protection Agency (EPA) is currently developing regulations under Section 316(b) of the Clean Water Act, 33 U.S.C., Section 1326(b). Section 316(b) provides that any standard established pursuant to Sections 301 or 306 of the Clean Water Act (CWA) and applicable to a point source will require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impact. Answers to the enclosed short technical questionnaire will help EPA identify the types and sizes of utilites that are subject to Section 316(b).

Please note that data from the short technical questionnaires are ***not*** intended to identify whether a specific plant's cooling water intake structures are having an adverse impact on the environment. Moreover, questionnaire responses are ***not*** intended to identify whether a specific plant is employing BTA with respect to minimizing adverse environmental impacts from cooling water intake structures, though they may help EPA determine BTA options for various classes of plants. The questionnaires are simply tools for characterizing some of the following: type and nature of plants using cooling water, specific uses of cooling water, design and configuration of cooling water systems and cooling water intake structures, types of technologies being used at intake structures, and whether plants have previously evaluated the environmental impacts of their cooling water intake structures. Data from the questionnaires will feed into other research being conducted by EPA that is more specifically designed to determine the nature of adverse impacts and the types of control technologies that might minimize such impacts. All of EPA's research efforts will feed the development of regulatory options, some of which will subsequently be fashioned into a proposed rulemaking that will be put forth for public review and comment.

The enclosed short technical questionnaire consists of three main sections. Section 1 requests general plant information, such as plant name, location, and Standard Industrial Classification (SIC) codes. Section 2 requests information from plants on such topics as National Pollutant Discharge Elimination System (NPDES) permit status, whether cooling water is used and, if so, whether it is withdrawn by the plant from surface water. Finally, information is requested on the types of activities for which the plant uses cooling water directly withdrawn from surface water. The purpose of these two sections is to help EPA determine the nature of plants within an industry group that use cooling water. Additionally, the information will help EPA identify (i.e., "screen") plants that are not subject to Section 316(b). These out-of-scope plants will be exempted from completing the remaining sections of the questionnaire. Plants that will be considered "out-of-scope" will include those that (1) are not point sources as defined under Section 502(14) of the Clean Water Act (33 U.S.C., 1362(14)), (2) do not use cooling water as that term is defined for the purposes of this questionnaire, or (3) do not receive any of their cooling water supply from a surface water source.

Section 3 requests plants to provide basic design and operational data on their cooling water intake structures and cooling water systems. Many of the questions are in multiple-choice format. The following types of information are being requested: total number of cooling water intake structures, originating sources of cooling water, total cooling water intake flow rates and operating days for a typical calendar year, total number of cooling water systems and their respective configurations, placement of cooling water intake structures in surface water bodies, control technologies being used at intake structures, and whether

## General Information and Instructions

plant or firm owners have ever conducted or commissioned environmental or ecological studies of the potential impacts of any of their cooling water intake structures.

### Authority

EPA has authority to administer this questionnaire under Section 308 of the CWA (33 U.S.C., Section 1318). Late filing of the questionnaire, or failure to follow any related EPA instructions, may result in civil penalties, criminal fines, or other sanctions provided by law.

### Where to Get Help?

☎ **Toll-Free Help Line**
**EPA Industry Short Technical Questionnaire: Phase II Cooling Water Intake Structures**

**Science Applications International Corporation (SAIC)**
*Available weekdays, 9:00 a.m. to 5:00 p.m., Eastern Time*
**Toll-Free Phone No.:** 1-877-316-COOL (1-877-316-2665)

### Certification Statement

A responsible corporate official or his or her duly authorized representative must verify the accuracy of the plant's responses to the questionnaire by reading and signing the enclosed Certification Statement. This statement needs to be returned to EPA along with the completed questionnaire.

### When and How to Return the Questionnaire?

You must complete and return the short technical questionnaire and Certification Statement to EPA within ***30 calendar days*** after receiving the materials at your plant or firm. Please return your materials, in the enclosed self-addressed envelope, to:

✉ **Industry Short Technical Questionnaire: Phase II Cooling Water Intake Structures**

U.S. Environmental Protection Agency
c/o SAIC (MS 1-11-12)
1710 Goodridge Drive
McLean, VA 22102-3799

**NOTE:** *Please **keep a copy** of the completed screener questionnaire and Certification Statement for your records.*

## Confidential Business Information

You may assert a business confidentiality claim for ***some*** or ***all*** of your responses to the short technical questionnaire, as described in 40 *CFR* 2.203(b) *(see full text below)*. Complete regulations governing confidentiality of business information (CBI) appear in 40 *CFR*, Part 2, Subpart B.

> 40 *CFR* 2.203(b) *Method and time of asserting business confidentiality claim.* A business which is submitting information to EPA may assert a business confidentiality claim covering the information by placing on (or attaching to) the information, at the time it is submitted to EPA, a cover sheet, stamped or typed legend, or other suitable form of notice employing language such as 'trade secret,' 'proprietary,' or 'company confidential.' Allegedly confidential portions of otherwise nonconfidential documents should be clearly identified by the business, and may be submitted separately to facilitate identification and handling by EPA. If the business desires confidential treatment only until a certain date or until the occurrence of a certain event, the notice should so state.

▶ You may claim confidentiality of business information for any of your responses by checking (✓) the box to the left of certain questions or by one of the methods described above.

If EPA reveals information covered by a claim of confidentiality, the Agency will strictly follow the requirements and procedures set forth in 40 *CFR* Part 2, Subpart B. Overall, EPA may reveal submitted information protected by a CBI claim ***only*** to other employees, officers, or authorized representatives of the United States who are responsible for implementation of the Clean Water Act. EPA has extensive standard operating procedures in place to handle, store, and transmit CBI data and has a long history of successfully managing this type of information. Personnel expected to handle CBI data are also required by the Agency to be trained and certified.

Agency contractors will have access to CBI data so that work can be performed under their contracts relative to the Section 316(b) rulemaking. All EPA contracts state that contractor employees must use CBI data ***only*** to perform work specified by EPA. The information is ***not*** to be shown to anyone, other than EPA officials, without prior written approval having been received from the affected business or from EPA's legal office.

## General Information and Instructions

### Specific Instructions for Completing the Questionnaire

Plant or firm personnel most knowledgeable of the subject areas covered by the questions posed should complete the questionnaire:

- **Please answer the questions in sequence unless you are directed to SKIP forward in the questionnaire.** This is important since many questions are only applicable to some respondents.

- **Clearly mark responses to all questions with a black or blue ink pen, *or* type responses in the spaces provided.**

- For each question, **please read all instructions and definitions carefully.**

- Most key terms are defined at the point where they first appear in the questionnaire. They are also defined in the ***Glossary***, which is attached to the back of the questionnaire. **Before responding to a given question, please read the definitions of any key terms used and any question-specific instructions.**

- **Please use the units specified when responding to questions requesting measurement data (e.g., gallons per day).**

- **Please provide responses on the basis of the time period(s) cited in each question.** Note that the time periods under which information is requested varies from question to question.

- **Please indicate whether information provided in any of your responses is confidential.** Such information will be protected under EPA's confidentiality procedures. To claim a particular response as containing confidential business information, simply check (✓) the box found to the left of the applicable question, if one is provided, or follow the other identification procedures described on the previous page and found under 40 *CFR* 2.203(b).

## Section 1: General Plant Information

**1. (a)** Does the above mailing label reflect the plant's full legal name and address?

F Yes (1) ▶ SKIP TO Q.2

F No (2)

**(b)** Please provide the complete legal name and mailing address for the plant:

**Name of Plant:** _____ (1)

**Street Address:** _____ (2)

**P.O. Box (if applicable):** _____ (3)

**City, State ZIP:** _____ (4)

**Telephone Number:** (  ) _____ (5)

**DUNS Number:** __ __ – __ __ __ – __ __ __ __ (6)

[ F Check (✓) here if none.]

**2.** Please identify the person responsible for questionnaire responses, and please provide the appropriate title and contact information:

**Name:** _____ (1)

**Title:** _____ (2)

**Employer** *(full legal name)***:** _____ (3)

**Relationship to Plant** *(e.g., domestic parent firm, contractor, etc.)***:** _____ (4)

**Telephone No:** (  )_____ (5a) **Fax No:** (  ) _____ (5b)

**Best Time to Contact:** _____ (6)

# 1 General Plant Information

**3.** Is the plant presently in commercial service?

**Note:** *To clarify for plants who are not in a commercial business, interpret this question as "Is your plant currently operating?"*

F Yes (1)

F No (2) ▶ **STOP**

*If answer is No, please stop here and return questionnaire with a completed Certification Statement.*

**4.** What are the four-digit ***Standard Industrial Classification (SIC) codes*** associated with the plant's main lines of business? **[Please use the SIC codes contained in the Office of Management and Budget's *1987 Standard Industrial Classification Manual*. This listing can also be found at the following Internet site: www.osha.gov/cgi-bin/sic/sicser5.]**

**NOTE:** *Since the 1930s, SIC codes have been used to facilitate the collection, tabulation, presentation, and analysis of data relating to U.S. business establishments by Federal statistical agencies (e.g., Office of Management and Budget or OMB, Bureau of the Census, etc.). The system was last updated by OMB in 1987. It was recently replaced by the North American Industry Classification System (NAICS) in 1997; however, it continues to be used by many Federal agencies. EPA believes it would be unnecessarily confusing to ask plants to classify themselves using NAICS codes for the purposes of this questionnaire.*

**Primary** ___ ___ ___ ___ (1)

**Secondary** ___ ___ ___ ___ (2)

**Other** ___ ___ ___ ___ (3a) ___ ___ ___ ___ (3b) ___ ___ ___ ___ (3c)

## Section 2: General Scoping Data

**5.** Does the plant presently have or is the plant presently in the process of obtaining a ***National Pollutant Discharge Elimination System (NPDES) permit***?

**NOTE:** *NPDES permits are required to be held under Section 402 of the Clean Water Act (33 U.S.C. 1342 et seq.) by any point source that discharges pollutants directly to waters of the United States. Plants that discharge 100 percent of their effluent (including storm water) to publicly-owned treatment works, privately-owned treatment works, and/or to ground water injection wells should answer "No" to this question.*

F Yes (1)

F No (2) ▶ **STOP**

*If answer is No, please stop here and return questionnaire with a completed Certification Statement.*

CBI? G **6.** Since January 1, 1996, has ***cooling water*** been used for contact or noncontact cooling purposes at the plant? **[Please consider all cooling water used regardless of the type of water source or provider from which it has been obtained.]**

F Yes (1)

F No (2) ▶ **STOP**

*If answer is No, please stop here and return questionnaire with a completed Certification Statement.*

**DEFINITION**

For the purposes of this questionnaire, the term **"cooling water"** refers to both contact and noncontact cooling water, including water used for air conditioning, equipment cooling, evaporative cooling tower makeup, and dilution of effluent heat content. The intended use of the cooling water is to absorb waste heat rejected from the process or processes employed or from auxiliary operations on the plant's premises.

CBI? G **7.** Since January 1, 1996, has the plant directly obtained any portion of its cooling water from a ***surface water source***?

**NOTE:** *In order for a plant to directly withdraw cooling water from surface water, it must have an* ***intake structure****.*

F Yes (1)

F No (2) ▶ **STOP**

*If answer is No, please stop here and return questionnaire with a completed Certification Statement.*

**DEFINITIONS**

For the purposes of this questionnaire, **surface water** includes lakes, ponds, or reservoirs; nontidal rivers or streams; tidal rivers; estuaries; fjords; oceans; and bays/coves. A **cooling water intake structure** is the total structure and associated technologies used to direct water from a water body into a plant up to the point of the first intake pump or series of pumps. The intended use of the cooling water is to absorb waste heat rejected from processes employed or from auxiliary operations on the plant's premises. Single cooling water intake structures might have multiple intake bays. If a plant has an intake structure that withdraws water for other purposes in addition to cooling, the entire intake structure should be considered a cooling water intake structure for the purposes of this questionnaire.

CBI? **G** **8.** In the matrix below, please indicate the activities for which your plant has used cooling water directly withdrawn from surface water since January 1, 1996? **[Please check (✓) all applicable activities.]**

**Activities Requiring Cooling Water Directly Withdrawn by Plant From Surface Water Since January 1, 1996**

| Item No. | Activities |
|---|---|
| 8(a) | **Electricity Generation** *(including equipment cooling)* . . . . . **F**<br>[ **F** Check (✓) here if any of plant's generating units that use cooling water are part of a **combined cycle unit**.]<br>**Definition:** *For the purposes of this questionnaire, a **combined cycle unit** is an electric generating unit that has one or more gas turbines or internal combustion engines and one or more steam boilers. Part of the required input to the boiler(s) is provided by the exhaust gas (waste heat) of the combustion turbines(s).* |
| 8(b) | **Air Conditioning (Cooling and Heating of Indoor Air)** . . . . . **F**<br>**Definition:** *For the purposes of this questionnaire, **air conditioning** refers to the process and equipment used to control the temperature and humidity of indoor air. Cooling water is used in some air types of conditioning systems.* |
| 8(c) | **Production Line (or Process) Contact or Noncontact Cooling** . . . . . **F**<br>*(for uses other than electricity generation and excluding air conditioning)*<br>**Definition:** *For the purposes of this questionnaire, the term **production line** refers to each of the successive steps taken at a plant to produce a product, except the production line's use of electricity.* |
| 8(d) | **Other** *(please describe below)*: . . . . . **F** |

# Section 3: Design and Operational Data for Cooling Water Intake Structures and Cooling Water Systems

CBI? **G 9.** How many intake structures does the plant have that directly withdraw surface water to support, at least in part, contact or noncontact cooling operations within the plant? **[Consider only those intake structures presently operating or temporarily offline (i.e., expected to operate again in the future). Do *not* include intake structures planned or under construction or permanently offline.]** . . . . . _____

CBI? **G 10.** For each intake structure reported under Q.9, please indicate in the matrix below all surface water sources from which the plant has directly withdrawn contact or noncontact cooling water since January 1, 1996 (or from the date the intake structure became operational if that date was later than January 1, 1996). **[Please check (✓) all water sources that apply per intake structure. If cooling water has been withdrawn from an intake canal/channel or constructed intake embayment/bay/cove, please indicate the *originating* source(s) of the water.]**

**Matrix 10** Matrix ___ of ___

**Originating Surface Water Sources of Cooling Water Since January 1, 1996 by Cooling Water Intake Structure (CWIS)**

*Response space has been provided for two CWISs. If your plant has more than this number of intake structures, please copy the matrix and change the CWIS code names or numbers as appropriate. Insert any additional matrices into this section of the questionnaire, and identify individual matrix sheets as Matrix "1 of 3," "2 of 3," etc.*

| Water Source Code | Originating Surface Water Source<br>[Please check (✓) all sources that apply per CWIS.]<br>***Note:*** *If cooling water has been withdrawn from an intake canal/channel or constructed intake embayment/bay/cove, please indicate the **originating** source of the water.* | CWIS _____<br>[Please indicate plant-designated name or no. of CWIS.] | CWIS _____<br>[Please indicate plant-designated name or no. of CWIS.] |
|---|---|---|---|
| **A** | **Lake, Pond, or Reservoir**<br>**Definitions:** *For the purposes of this questionnaire, a **lake** is an expanse of water, usually fresh, surrounded by land or by land and a manmade retainer. Lakes may be fed by rivers, streams, springs, and/or local precipitation. A **pond** is a still body of water generally smaller than a lake. A **reservoir** is an artificial body of surface water retained by a dam.*<br>**NOTE:** *These terms are not to be confused with the terms **cooling lake** or **cooling pond**. The primary purpose of these water bodies is to absorb waste heat rejected from a plant's wastewater discharge.* | **F** (1) | **F** (1) |
| **B** | **Nontidal River or Stream**<br>**Definition:** *For the purposes of this questionnaire, a river or stream is **nontidal** when no significant inflow of water from an ocean or bay due to tidal action occurs.* | **F** (2) | **F** (2) |

See next page for continuation of Matrix 10.

# 3 Design and Operational Data

**Matrix 10 (Continued)** Matrix ___ of ___

**Originating Sources of Cooling Water Since January 1, 1996 by Cooling Water Intake Structure (CWIS)**

*Response space has been provided for two CWISs. If your plant has more than this number of intake structures, please copy the matrix and change the CWIS code names or numbers as appropriate. Insert any additional matrices into this section of the questionnaire, and identify individual matrix sheets as Matrix "1 of 3," "2 of 3," etc.*

| Water Source Code | Originating Water Source<br>**[Please check (✓) all sources that apply per CWIS.]**<br>***Note:*** *If cooling water has been withdrawn from an intake canal/channel or constructed intake embayment/bay/cove, please indicate the* ***originating*** *source of the water.* | CWIS _____<br>**[Please indicate plant-designated name or no. of CWIS.]** | CWIS _____<br>**[Please indicate plant-designated name or no. of CWIS.]** |
|---|---|---|---|
| **C** | **Tidal River**<br>**Definition:** *For the purposes of this questionnaire, a* ***tidal river*** *is the portion of river above the river's mouth that receives a regular, significant inflow of water from an ocean or bay due to tidal action.* | **F** (3) | **F** (3) |
| **D** | **Estuary**<br>**Definition:** *For the purposes of this questionnaire, an* ***estuary*** *is a semi-enclosed coastal body of water that has a free connection with the open sea and is strongly affected by tidal action. In an estuary, sea water is mixed (and usually measurably diluted) with fresh water inflow from rivers.*<br>**NOTE:** *The Chesapeake Bay and the San Francisco Bay are examples of estuaries even though the term* ***bay*** *appears in their names.* | **F** (4) | **F** (4) |
| **E** | **Ocean**<br>**Definition:** *For the purposes of this questionnaire, an* ***ocean*** *is defined as marine open coastal waters other than those water bodies classified as estuaries, embayments, or fjords, which are semi-enclosed and have readily identifiable geographic boundaries.* | **F** (5) | **F** (5) |
| **F** | **Bay or Cove** ***(natural, saline water)***<br>**Definition:** *For the purposes of this questionnaire, a* ***bay or cove*** *is an inlet created when the shoreline of a water body is indented. Bays are generally larger than coves but are smaller than gulfs. Coves are generally sheltered.* **[Do not mark this response if the bay or cove is constructed; see column note above.]** | **F** (6) | **F** (6) |
| **G** | **Bay or Cove** ***(natural, fresh water)***<br>**[See definition and instructions directly above.]** | **F** (7) | **F** (7) |

CBI? **G 11.** Please complete the matrix below for each of the plant's cooling water intake structures reported under Q.9. In this matrix, EPA is requesting plants to provide, for a ***typical calendar year*** since January 1, 1996, the total number of days the structure was operational (Item a), its average daily intake flow rate in gallons per day (GPD) (Item b), and the surface water sources used (Item c). **[Please provide actual data to the extent they are readily available; otherwise, best engineering estimates may be provided.]**

**DEFINITION** For the purposes of this questionnaire, a ***typical* calendar year** is one in which the plant and its cooling water intake structures are operated in a normal, routine, regular, or otherwise standard fashion. The data provided should be similar to data from other recent calendar years of operation or from projected, near future years of operation (i.e., 1999 to 2001).

**Total No. of Operating Days, Average Daily Intake Flow Rate, and Originating Water Sources for a *Typical* Calendar Year Since January 1, 1996 by Cooling Water Intake Structure (CWIS)** Matrix ___ of ___

*Response space has been provided for two CWISs. If your plant has more than this number of intake structures, please copy the matrix and change the CWIS code names or numbers as appropriate. Insert any additional matrices into this section of the questionnaire, and identify individual matrix sheets as Matrix "1 of 3," "2 of 3," etc.*

| Item No. | Data Requested [For each CWIS, please provide responses for the same typical calendar year for each item in the matrix. Actual data should be provided if available; otherwise, best engineering estimates may be provided.] | CWIS _____ [Please insert same no. or name as under Matrix 10, page 12.] | CWIS _____ [Please insert same no. or name as under Matrix 10, page 12.] |
|---|---|---|---|
| **11(a)** | No. of **Operating Days** for Each CWIS in Typical Calendar Year<br><br>**Definition:** *For the purposes of this questionnaire, the term **operating days** refers to the total number of days (1 day = 24 hours) a cooling water intake structure was operational during a calendar year, excluding any days the intake structure was offline for routine maintenance or otherwise was not operational. Partial days (any day in which operations were less than 24 hours) should **not** be counted as operational days.* | _____days | _____days |
| **11(b)** | Average Daily Intake Flow Rate (in GPD) for Each CWIS in Typical Calendar Year | _____GPD | _____GPD |
| **11(c)** | Originating Surface Water Source(s) from Which Each CWIS Withdrew Cooling Water in Typical Calendar Year **[Please use water source codes listed in the left-hand column of Matrix 10 on page 12. If multiple water sources were used, please separate codes by a comma.**] | | |
| **11(d)** | Design Through-Screen Velocity at Low Flow Surface Elevation **[Please provide the design through-screen velocity for each cooling water intake structure (in fps). ]** | _____fps | _____fps |

# 3 Design and Operational Data

CBI? **G** **12.** **(a)** In the space provided below, please indicate the total number of ***cooling water systems*** that are presently operating or temporarily offline (expected to operate again in the future) at the plant. Do ***not*** consider cooling water systems that are planned or under construction or permanently offline.

**NOTE:** *Please consider your plant as having only **one** cooling water system **unless** your plant has systems that are physically separated (e.g., have separate water intake **and** outlet structures) and can be operated independently. If the plant has several intake structures, but only **one** outlet structure, or vice-versa, please consider the plant as having only **one** cooling water system. An intake structure with multiple bays counts as one intake structure.*

**DEFINITION** For the purposes of this questionnaire, a **cooling water system** is a system that provides water to/from a plant to transfer heat from equipment or processes therein. The system includes, but is not limited to, water intake and outlet structures, cooling towers, ponds, pumps, pipes, and canals/channels. For plants that use surface water for cooling, the system begins at the first barrier to ingress and/or egress by fish and other aquatic wildlife (e.g., at the trash rack, etc.) and ends at the discharge outlet(s).

**Total Number of Cooling Water Systems** . . . . . _____

CBI? **G** **(b)** Please provide the general profile data requested in the matrix below for each of the plant's cooling water systems. **[Please check (✓) all applicable design configuration types per system.]**

**Profile of Plant's Cooling Water Systems (CWSs)** Matrix ___ of ___

*Response space has been provided for two CWSs. If your plant has more than this number of systems, please copy the matrix and change the CWS code numbers as appropriate. Insert any additional matrices into this section of the questionnaire, and identify individual matrix sheets as Matrix "1 of 3," "2 of 3," etc.*

| Data Requested | CWS #1 | CWS #2 |
|---|---|---|
| Configuration of CWS **[Please check (✓) all applicable configuration types per system.]**<br><br>**NOTE:** *Refer to the **Glossary** for definitions of the design configurations and system components listed.* | **Once-Through CWSs**<br>Once-Through Only . . . . . **F** (1)<br>Once-Through with Nonrecirculating Cooling Canals/Channels, Lakes or Ponds . . . . . **F** (2)<br>Once-Through with Nonrecirculating Cooling Towers . . . . . **F** (3)<br>**Recirculating CWSs**<br>Recirculating Only . . . . . **F** (4)<br>Recirculating with Cooling Canals/ Channels, Lakes, or Ponds . . . . . **F** (5)<br>Recirculating With Cooling Towers . **F** (6)<br>**Other** . . . . . **F** (7)<br>*(please describe below):* | **Once-Through CWSs**<br>Once-Through Only . . . . . **F** (1)<br>Once-Through with Nonrecirculating Cooling Canals/Channels, Lakes or Ponds . . . . . **F** (2)<br>Once-Through with Nonrecirculating Cooling Towers . . . . . **F** (3)<br>**Recirculating CWSs**<br>Recirculating Only . . . . . **F** (4)<br>Recirculating with Cooling Canals/ Channels, Lakes, or Ponds . . . . . **F** (5)<br>Recirculating With Cooling Towers . **F** (6)<br>**Other** . . . . . **F** (7)<br>*(please describe below):* |

CBI? **G** **13.** Which of the following terms best describe the configuration of your plant's intake structures (as reported under Q.9 above) that are being used to withdraw some portion of surface water for contact or noncontact cooling purposes? **[Please check (✓) all design configurations that apply.]**

**NOTE:** *Schematics of the design configurations listed can be found in the* ***Glossary*** *accompanying the questionnaire.*

**Configuration of Plant's Cooling Water Intake Structures**

| Item No. | Design Configurations [Please check (✓) all design configurations that apply.] |
|---|---|
| 13(a) | **Intake Canal or Channel** *(natural or constructed)* . . . . . **F**<br>**Definition:** *For the purposes of this questionnaire, an* ***intake canal*** *or* ***channel*** *is a channelized conduit that directs water through screens or other filtering devices up to the intake pump or series of pumps.* |
| 13(b) | **Submerged Intake Structure Flush with Shoreline** . . . . . **F**<br>**Definition:** *For the purposes of this questionnaire, a* ***submerged intake structure flush with the shoreline*** *is an intake structure whose opening is closely aligned with the shoreline and that always withdraws water from below the surface of the water body.* |
| 13(c) | **Surface Intake Structure Flush with Shoreline** . . . . . **F**<br>**Definition:** *For the purposes of this questionnaire, a* ***surface intake structure flush with the shoreline*** *is an intake structure whose opening is evenly aligned with the shoreline and that generally withdraws water from the surface of a water body.* |
| 13(d) | **Intake Embayment, Bay, or Cove** *(natural or constructed)* . . . . . **F**<br>**Definition:** *For the purposes of this questionnaire, an* ***intake embayment, bay, or cove*** *is a natural or constructed inlet along the shoreline of a water body that serves to direct water through screens or other filtering devices up to the intake pump or series of pumps.* |
| 13(e) | **Submerged Offshore Intake Structure** . . . . . **F**<br>**Definition:** *For the purposes of this questionnaire, a* ***submerged offshore intake structure*** *is an intake structure that extends from a plant outward into a water body. The intake opening is submerged, and the water withdrawn is always from below the surface of the water body.* |
| 13(f) | **Other** . . . . . **F**<br>**[Please briefly describe the configuration of any cooling water intake structure that does not fit the above categories and explain why it is unique.]** |

# 3 Design and Operational Data

CBI? **G** **14.** What types of technologies are being used at the plant's intake structures, as reported under Q.9, that are intended to protect the plant's cooling water systems and/or reduce environmental impacts posed by the intake structures themselves? **[Please check (✓) all technology categories that apply.]**

**Technology Types Being Used at Plant's Cooling Water Intake Structures**

| Item No. | Control Technology Types [Please check (✓) all technology categories that apply.] |
|---|---|
| 14(a) | **Fish Diversion or Avoidance Systems** . . . . . **F**<br>**Definition:** *For the purposes of this questionnaire,* ***fish diversion or avoidance systems*** *are mechanisms designed to divert or induce fish to swim away from a water intake structure.*<br>**Examples:** Louver Barrier ❖ Velocity Cap ❖ Fish Net Barrier ❖ Air Bubble Barrier ❖ Electrical Barrier ❖ Light Barrier ❖ Sound Barrier ❖ Cable & Chain Barrier ❖ Water Jet Barrier |
| 14(b) | **Passive Intake Systems** . . . . . **F**<br>**Definition:** *For the purposes of this questionnaire,* ***passive intake systems*** *are devices placed at or near the opening of an intake structure that, with little or no mechanical activity, stop debris and/or organisms from entering a plant's water system. Most passive intake systems achieve very low withdrawal velocities at the screening medium.*<br>**Examples:** Wedge Wire Screen ❖ Perforated Pipe ❖ Perforated Plate ❖ Radial Well or Ranney Collector ❖ Porous Dike ❖ Artificial Filter Bed ❖ Leaky Dam |
| 14(c) | **Fish Handling and/or Return Systems** . . . . . **F**<br>**Definition:** *For the purposes of this questionnaire, a* ***fish handling system*** *includes any system that collects and/or transports live organisms and debris away from an intake structure.*<br>**Examples:** Fish Conveyance Systems (troughs or pipes) ❖ Fish Basket ❖ Fish Elevator (lift basket) ❖ Fish Bypass System ❖ Fish Holding Tank |
| 14(d) | **Intake Screen Systems** . . . . . **F**<br>**Definition:** *For the purposes of this questionnaire,* ***intake screen systems*** *are devices placed at or near the opening of an intake structure to mechanically stop debris and/or organisms from entering a plant's water system.*<br>**Examples:** Revolving Drum ❖ Screen (Horizontal or Vertical) ❖ Rotating Disk ❖ Screen ❖ Fixed Screen ❖ Traveling Screen |
| 14(e) | **Other** . . . . . **F**<br>**[Please denote any technology that does not fit one of the above technology categories and briefly describe why the technology(ies) is/are unique.]** |
| 14(f) | **No Technologies** . . . . . **F** |

CBI? **G 15.** **(a)** Has your plant or its firm owner ever conducted or commissioned a study of the ecological or environmental effects of any of the plant's intake structures that have withdrawn surface water for contact or noncontact cooling purposes (i.e., those intake structures reported under Q.9)?

**F Yes** (1)

**F No** (2)

**(b)** Please provide the name of the most recent study completed. In addition, please provide the name and telephone number of the individual(s) we should contact if we require additional information regarding the study.

**Name of Most Recent Study:**_____ (1)

**Contact Name:** _____ (2)

**Telephone Number:** ( )_____ (3)


**THANK YOU FOR COMPLETING EPA'S *INDUSTRY SHORT TECHNCIAL QUESTIONNAIRE: PHASE II COOLING WATER INTAKE STRUCTURES*. WE APPRECIATE YOUR COOPERATION. PLEASE RETURN THE QUESTIONNAIRE WITH A SIGNED CERTIFICATION STATEMENT IN THE ENVELOPE PROVIDED.**